

CLAIMS

What is claimed is:

1. A method of resetting a human circadian clock comprising the step of exposing a non-ocular region of a human subject to a non-solar photic stimulation during one or more circadian cycles to reset the human circadian clock.
2. The method according to Claim 1 further comprising the step of assessing a time when a daily minimum body temperature for the human subject occurs, wherein said step of exposing the non-ocular region begins at an exposure time dependent upon the assessed time.
3. The method according to Claim 2 wherein said step of exposing the non-ocular region begins before the assessed time.
4. The method according to Claim 3 wherein said step of exposing the non-ocular region begins within about six hours prior to the assessed time.
5. The method according to Claim 2 wherein said step of exposing the non-ocular region begins after the assessed time.
6. The method according to Claim 5 wherein said step of exposing the non-ocular region begins within six hours after the assessed time.
7. The method according to Claim 1 wherein said step of exposing the non-ocular region occurs while the human subject is awake.
8. The method according to Claim 1 wherein said step of exposing the non-ocular region occurs while the human subject is asleep.
9. The method according to Claim 1 wherein said step of exposing the non-ocular region lasts for a duration ranging from between about 15 minutes to about 12 hours.
- 35 10. The method according to Claim 9 wherein the duration of said non-ocular exposure is about three hours.

11. The method according to Claim 1 wherein said non-solar photic stimulation has an intensity between about 15 lux to about 150,000 lux.
12. The method according to Claim 11 wherein said non-solar photic stimulation has an intensity between about 10,000 lux to about 13,000 lux.
13. The method according to Claim 1 wherein said non-solar photic stimulation has a bandwidth in the visible spectrum.
14. The method according to Claim 13 wherein said non-solar photic stimulation has a bandwidth between about 455 nanometers (nm) and 540 nm.
15. The method according to Claim 1 wherein the given number of circadian cycles is one.
16. The method according to Claim 1 wherein the given number of circadian cycles is two or more.
17. The method according to Claim 1 wherein the non-ocular region of the human subject has ample surface vasculature.
18. The method according to Claim 19 wherein the non-ocular region is a popliteal region of the human subject.
- 25 19. The method according to Claim 1 wherein said step of exposing the non-ocular region is used to treat a circadian rhythm sleep disorder.
20. The method according to Claim 19 wherein said step of exposing the non-ocular region is used to treat the circadian rhythm sleep disorder resulting from transmeridian travel (jet-lag).
- 30 21. The method according to Claim 19 wherein said step of exposing the non-ocular region is used to treat Shift Work Sleep Disorder.
- 35 22. The method according to Claim 19 wherein said step of exposing the non-ocular region is used to treat Advanced Sleep Phase Syndrome (ASPS).

23. The method according to Claim 19 wherein said step of exposing the non-ocular region is used to treat Delayed Sleep Phase Syndrome (DSPS).
24. The method according to Claim 19 wherein said step of exposing the non-ocular region is used to treat Non-24-Hour Sleep-Wake Disorder.
25. The method according to Claim 19 wherein said step of exposing the non-ocular region is used to treat Irregular Sleep-Wake Pattern.
26. The method according to Claim 1 wherein said step of exposing the non-ocular region is used to treat sleep and circadian rhythm disorders associated with blindness.
27. The method according to Claim 1 wherein said step of exposing the non-ocular region is used to treat sleep and circadian rhythm disorders in individuals for whom ocular light exposure is contraindicated.
28. A method of enhancing nighttime alertness and performance in a human subject comprising the step of exposing a substantially non-ocular region of the human subject to a non-solar photic stimulation during one or more circadian cycles.
29. The method according to Claim 28 wherein said step of exposing the non-ocular region is used to enhance alertness and performance of workers on rotating shift work schedules.
30. The method according to Claim 28 wherein said step of exposing the non-ocular region is used to enhance alertness and performance of individuals working permanent work schedules.
31. The method according to Claim 28 wherein said step of exposing the non-ocular region lasts for a duration ranging from between about 15 minutes to about 12 hours.
32. The method according to Claim 28 wherein said non-solar photic stimulation has an intensity between about 15 lux to about 150,000 lux.

33. The method according to Claim 28 wherein said non-solar photic stimulation has a bandwidth in the visible spectrum.
34. The method according to Claim 28 wherein the non-ocular region of the human subject has ample surface vacuature.
35. The method according to Claim 28 wherein the non-ocular region is a popliteal region of the human subject.
36. A method of resetting a human circadian clock comprising the steps of: assessing a time when a minimum body temperature for a human subject; and exposing a substantially non-ocular region of the human subject to a non-solar photic stimulation for one or more circadian cycles to reset the human circadian clock at an exposure time dependent upon the assessed time.
37. The method according to Claim 36 wherein said step of exposing the non-ocular region begins before the assessed time.
38. The method according to Claim 36 wherein said step of exposing the non-ocular region begins about six hours prior to the assessed time.
39. The method according to Claim 36 wherein said step of exposing the non-ocular region begins after the assessed time.
40. The method according to Claim 39 wherein said step of exposing the non-ocular region begins within six hours after the assessed time.
41. The method according to Claim 36 wherein said step of exposing the non-ocular region occurs while the human subject is awake.
42. The method according to Claim 36 wherein said step of exposing the non-ocular region occurs while the human subject is asleep.
43. The method according to Claim 36 wherein said step of exposing the non-ocular region lasts for a duration ranging from between about 15 minutes to about 12 hours.

44. The method according to Claim 43 wherein the duration of said non-ocular exposure is about three hours.

5 45. The method according to Claim 36 wherein said non-solar photic stimulation has an intensity between about 15 lux to about 150,000 lux.

46. The method according to Claim 45 wherein said non-solar photic stimulation has an intensity between about 10,000 lux to about 13,000 lux.

10 47. The method according to Claim 36 wherein said non-solar photic stimulation has a bandwidth in the visible spectrum.

15 48. The method according to Claim 47 wherein said non-solar photic stimulation has a bandwidth between about 455 nm and 540 nm .

49. The method according to Claim 36 wherein the number of circadian cycles is one.

20 50. The method according to Claim 36 wherein the number of circadian cycles is two or more.

51. The method according to Claim 36 wherein the non-ocular region of the human subject has ample surface vasculation.

25 52. The method according to Claim 51 wherein the non-ocular region is a popliteal region of the human subject.

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